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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/615,072	07/08/2003	Frank B. Simpson	1090	7876

7590

04/29/2005

Donald J. Ersler
725 Garvens Avenue
Brookfield, WI 53005

EXAMINER

SOOHOO, TONY GLEN

ART UNIT

PAPER NUMBER

1723

DATE MAILED: 04/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/615,072

Applicant(s)

SIMPSON, FRANK B.

Examiner

Tony G. Soohoo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7-20-03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-9, 12-25, 27-30 and 32-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Derlien 5244461 in view of Herold et al et 5286105 and Figueira et al 4630722 and Osawa 5090538 and in further view of Wegmann et al 4257540, and D'Antonio et al 6056716.

Derlien teaches a motor 20, a clutch 33, slide platform 20, 18, driven by lead screw 28, 24, 26, a syringe 10, a syringe support 14.

Derlien discloses all of the recited subject matter as defined within the scope of the claims with the exception of the clutch 33 being a wrap spring clutch and flywheel assembly for selective coupling of the drive, and a mixer at the end of the syringe, and a fly wheel having a mass for rotational stability.

Herold et al et 5286105 teaches a syringe dispenser and mixing device with a magnetic clutch 30 to selectively couple the motor to the advancement drive.

Figueira et al 4630722 teaches an electromagnetic wrap spring clutch having a wrap spring 34.

Osawa 5090538 teaches an electromagnetic wrap spring clutch having a rotating member which may be deemed as a drive wheel 30 and wrap spring 36.

In view of the teaching by Herold et al et 5286105 that a syringe dispenser and mixing device may use a magnetic clutch 30 to selectively couple the motor to the advancement drive and whereby Figueira et al 4630722, Osawa 5090538 also teaches electromagnetic clutches constructed as an electromagnetic wrap spring clutch as a selective drive assembly, it is deemed that it would have been obvious to one of ordinary skill in the art to substitute for the processor controlled clutch 33, 38, and 40 of Derlien with a magnetic clutch and flywheel assembly such that one may more easily control the coupling and decoupling of the clutch using electrical signals from the processor 60 of Derlien.

Furthermore with regards the issue of a flywheel, the patents to Wegmann et al 4257540, and D'Antonio et al 6056716 discloses that is known in the art of drive transmission devices to a pumping dispenser system to provide a flywheel of sufficient size and mass to provide a conservation and dampening of rotational energy when the shaft is driven or when the clutch is engaged or disengaged thereby increasing the effectiveness of the loaded motor, see Wegmann (et al) reference, column 4, lines 27-55, and D'Antonio (et al) reference , 12, line 45-50. Accordingly in view of such evidence of the prior art to the common knowledge to use flywheels in dispensing drive motor mechanism transmissions in order to increase the motor and drive energy transfer/conservation, it is deemed that it would have been obvious to one of ordinary skill in the art to provide for the Derlien reference with a flywheel of an such a size and

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weight to provide conservation and dampening efficiencies of the drive motor when rotational energy is engaged/disengaged throughout the drive transmission.

With regards to issues of a "frit mixer" of claim 6 and , the phrase is directed to the material to be used in the mixer itself thereby is not afforded any patentable distinction to the structural scope defined by the apparatus claims.

With regards to claims 7 and 23, the shape of the entrance and exit being flared is directed to a change of shape of a flow orifice. It is commonly known in the art to a person having ordinary skill in the art of flow mechanics that flow orifice shape of an inlet/outlet will positively effect the flow rate. It is further known in the art of fluid dynamics to provide converging and diverging ducts to an inlet and outlet thereby optimizing flow efficiency. According, it is deemed that it would have been obvious to one of ordinary skill in the art, absent any unexpected results, to modify the inlet/outlet with a flare shape so as to optimize the flow across the openings at the inlet and/or outlet.

With regards to the adjustment of the motor control velocity of claims 8-9 and 24-25 , and feedback controls, the use of motor velocity controls and feed back controls in the operation of electric motors are old and well known to an electrical engineer in the art of motor design. Accordingly, it is deemed that it would have been obvious to one of ordinary skill in the art to provide such elements so that the motor may be operated in more efficient manner and thereby prevent damage to the motor.

With regards to claims 13-14, the reactor is a separate element to an combination of an elements which is beyond the scope of the instant subcombination

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being claimed and thus has been considered and afforded no patentable weight in distinction.

With regards to claim 15 the use of a tachometer is known to measure the rpm of a rotating element, accordingly, absent any unexpected results, it is deemed that it would have been obvious to one of ordinary skill in the art to provide for the device of the Derlien as modified above with a tachometer so as to better monitor the status of the operation of the device in order to prevent damaging the device.

With regards to claim 16 and 30, it is noted that a clutch inherently has a braking capability in operation whereby frictional losses is capable of slowing the element(s). Such a recitation is merely functional and has not positively claimed any further structure connected to the wrap spring clutch.

With regards to the use of a position limit switch of claim 12, such safety switches for moving platforms are old and well known as a use to prevent damage of the moving parts. Accordingly, absent any unexpected results, it is deemed that it would have been obvious to one of ordinary skill in the art to provide such a switch to prevent the platform from exceeding the position travel thereby preventing damage.

3. Claims 11 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Derlien 5244461 in view of Derlien 5244461 in view of Herold et al et 5286105 and Figueira et al 4630722 and Osawa 5090538 and in further view of Wegmann et al 4257540, and D'Antonio et al 6056716, as discussed in claim 1, 20 above, and further in view of Ernst et al 5020693.

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Derlien 5244461 as modified as applied above, discloses all of the recited subject matter as defined within the scope of the claims with the exception of a nut and pin to hold slide platform to quickly adjust the platform on the shaft.

The Ernst (et al) reference discloses that a slide assembly may have a moving block 118, nut 150 and pin 152 so as to quickly position the motion on the control rod.

In view of the teaching by the Ernst reference, it is deemed that it would have been obvious to one of ordinary skill in the art to provide for the device of Derlien with a nut and pin in order to quickly adjust the platform.

4. Claims 11 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Derlien 5244461 in view of Derlien 5244461 in view of Herold et al et 5286105 and Figueira et al 4630722 and Osawa 5090538 and in further view of Wegmann et al 4257540, and D'Antonio et al 6056716, as discussed in claim 1, 20 above, and further in view of Smith et al 5690618.

Derlien 5244461 as modified as applied above, discloses all of the recited subject matter as defined within the scope of the claims with the exception of a potentiometer and a/d converter to locate the positioning of the platform.

Smith et al 5690618 teaches that a syringe with driven motor drive 42, 82 may have a sensor an potentiometer strip 110, column 5, line 9-20 which provides a position information and feedback.

In view of the teaching of the Smith (et al) reference that one may use a potentiometer and a/d sensor to locate the position of the piston so as to record the

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amount of material dispensed, it is deemed that it would have been obvious to one of ordinary skill in the art to device of Derlien with a potentiometer and a/d converter to locate the positioning of the platform so that one may more easily determine the amount of material dispensed by the syringe.

5. Claim 31, 34, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Derlien 5244461 in view of Derlien 5244461 in view of Herold et al et 5286105 and Figueira et al 4630722 and Osawa 5090538 and in further view of Wegmann et al 4257540, and D'Antonio et al 6056716, as discussed in claim 1 above, and further in view of Keller 6371336.

Derlien 5244461 as modified as applied above, discloses all of the recited subject matter as defined within the scope of the claims with the exception of a cam shaft having at least two cams attached to a cam shaft; and whereby the cam shaft has with a cam 59 and cam follower 52.

Keller teaches that the advancement of syringe plungers 3 may be advanced by a cam shaft having at least two cams attached to a cam shaft via a drive belt 26 whereby the cam shaft has with a cam 59 and cam follower 52.

In view of the teaching of Keller, that the advancement of syringe plungers 3 may be advanced by a cam shaft having at least two cams attached to a cam shaft via a drive belt 26 whereby the cam shaft has with a cam 59 and cam follower 52, it is deemed that it would have been obvious to one of ordinary skill in the art to modify the drive of Derlien with that the advancement of syringe plungers 3 may be advanced by a

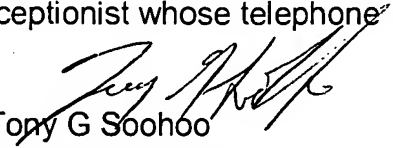
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cam shaft having at least two cams attached to a cam shaft via a drive belt 26 whereby the cam shaft has with a cam 59 and cam follower 52 such that the Derlien may process two syringe plungers for mixing.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following discloses syringe dispensing devices with a clutch assembly in the parent application and is currently recited: Jewett et al 3415419, Davis, Jr 4273269, and 3997084, Wootten et al 3880138, Wuthrich et al 4059110, Williamson 3156236, Crankshaw 5034004, Kuroda 5176646.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tony G. Soohoo whose telephone number is (571) 272 1147. The examiner can normally be reached on 7:00 AM - 5:00 PM, Tues. - Fri.. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-1700.


Tony G Soohoo
Primary Examiner
Art Unit 1723

tgs